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The study of multinationals in international trade: Revisiting the literature

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ABSTRACT: In this project, we focus on the theories of international trade and heterogeneous multinational firms. With these objectives in mind, we revisited the related literature. We try to show the developments in the theory of trade and multinational firms in relation with the behavior of heterogeneous firms; their self-selection, and how they can influence in the global market. Overall, we find that the success archived by firms when operating in international markets is due to a mix of different components that eventually leads to an increase of social welfare. In this way, firstly, they get a greater productivity compared to its competitors. They also enhance innovation, and the comparative advantage position of firms in terms of ownership, and internalization. Secondly, the presence of multinational firms might improve social welfare through wage increases and technological progress.

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Keywords: multinationals, international trade, heterogeneous firms, productivity

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1. INTRODUCTION

The world has become globalized thanks to the development of telecommunications and transport, which has led to the creation of a global market. This globalization has been supported by organisms and institutions such as the WTO and the IMF, governments, and multinational enterprise (MNE). Belonging principally to three geoeconomics regions worldwide that are the US, EU and Japan which control trade, technology, information, transport, and communications. Thanks to this development, multinational businesses have been able to settle in other countries from subsidiaries keeping the parent in the base nation.

Currently anyone can reach the product they want through online sales; this has led to consumers standardizing their tastes largely due to the rapid dissemination of information about behaviors between countries; this has encouraged companies to be able to cover different geographic markets with the same product or through diversifications of the same good. Even if an individual were not attentive of the outside life, surely, he would know the brands such as Amazon, Apple or Google belonging to the multinational enterprise Alphabet of the USA or Inditex, and Spaniard firm.

Even in the current moments where we are living with an unprecedented pandemic, the main global corporations, through new technologies, have been economically reinforced. In the case of Amazon, for example, its capitalization has raised to more than 1.55 billion dollars due mainly to its revaluation in the stock market.

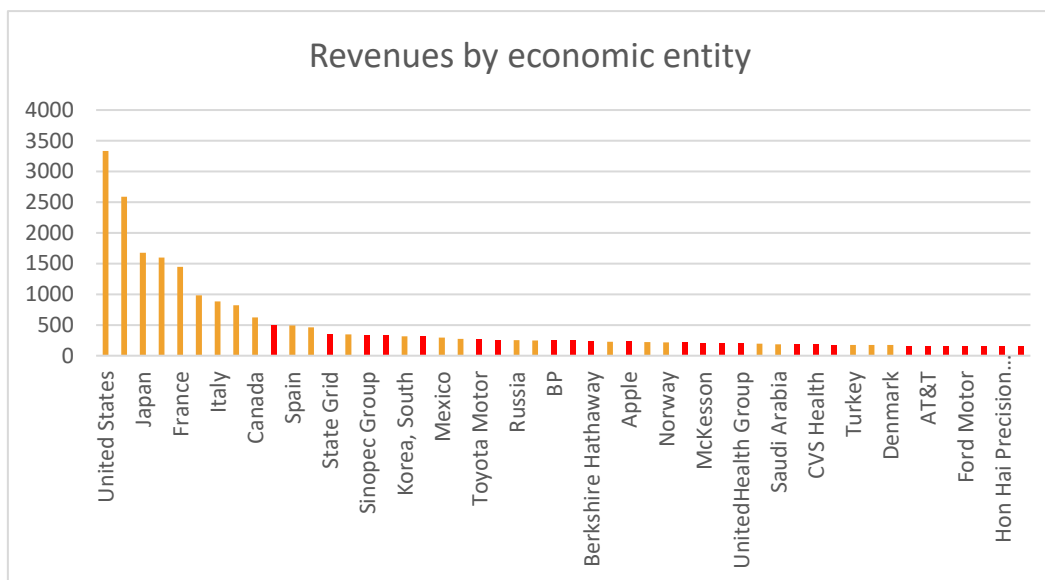
The research that has been given in international trade has evolved in recent decades, creating a new theory of trade. Therefore, this goes from studying the influence of countries to studying the influence of companies. Because they are the ones that influence the market, being an essential component when the administrations develop the growth strategy of its country.

The change in the study on international trade has occurred in large part as markets are dominated by a few global companies that participate further intensely in the economy, making their impact on the politics and wealth of the states in which they operate more. According to data compiled by Global Justice Now (2018) the 100 most important economic entities, 69 were businesses, the main ones being Walmart or Toyota with more than 3 trillion dollars of revenues in 2017. Consequently, it is logical that the influence of multinational firms in the economy has become increasingly important since

some corporations such as State Grid or Sinopec Group have larger wealth than countries such as Mexico or Russia as can be seen in Figure 1.

Figure 1.

Revenues by economic entity



Top 50 entities with their revenues. On the x-axis, the red bars are the companies and the blue bars are the countries, on the y-axis, revenue is measured in billions of dollars. Source: CIA World Factbook 2017; Fortune Global 500.

That is why when studying the economies of countries, it is considered essential to address the issue of multinationals and how they influence trade between nations. The literature that has been written on the subject is extensive but appears in the 60s with what is relatively recent. So, it is necessary to investigate more in this aspect since it is a somewhat complicated question to analyze due to the size of the data and the struggle to acquire them. The main objective of this work is to review the most important works in the literature that focus on heterogeneous multinational firms and their connection with international trade.

Consequently, the main areas of study of multinational enterprises businesses will be explained to give a global vision of these companies. In addition, we must focus on know more about the key aspects that make global firms stand out from the others. So, we need to investigate why they achieve higher productivity, pay greater salaries, contributes to innovation and development, make greater profits, and gets influence in market.

As for the sections of the work, first, an analysis of the international trade literature will be carried out to publicize how economic theories have evolved to give way to theories about heterogeneous firms. Starting with traditional theories and theories of new trade with prominent models such as the Ricardian that will be the basis of many of the current one's. Krugman's model (1979) also stood out, which led to the development of economies of scale. Later, the main theoretical and empirical works that have developed the basis of the study of multinational enterprise will be discussed, such as Hymer's (1960) and Melitz's (2003). In this section we will know the keys to the study of current international trade and special importance will be given to the characteristics of heterogeneous firms.

The next section deals with one of the most questioned issues when talking about multinational firms and that is why some succeed and not others. Thanks to various authors who have addressed the subject, a solution will be given to this question that allows us to get an idea of how companies are self-selected.

The third section of the work addresses another of the main arguments of multinational businesses and is the complicated decision they must make when choosing between exporting to a foreign country or investing directly (FDI). Various works will be grouped together that give a clear answer and that is that those companies that are more productive and larger will have to approach foreign markets from an FDI in such a way that the new market is more profitable for them.

The section on how multi-plant enterprises affect countries will be divided into two themes, economics, and politics. To be able through both theoretical and empirical works and current data to explain how multinational enterprise influence countries in a positive way, increasing their productivity and how fiscal and economic policies change the well-being of the country as a consequence of heterogeneous firms.

All in all, we will address the issue of wages, this as will be seen below is controversial since, although the establishment of subsidiaries in foreign countries provides an increase in workers' wages, despite this it also tends to increase the wage inequality between qualified and unskilled individuals.

Finally, a conclusion will be made with the main ideas that have been extracted because of this work giving special importance to what has been studied and what should be

studied and expanded in the future in order to have a clear theory on the performance of heterogeneous or multinational enterprise in international trade.

2. THE EVOLUTION OF THEORY IN INTERNATIONAL TRADE

2.1 TRADITIONAL THEORIES

The first theories of international trade, concretely, the classical model was based on the study of trade between countries. At the beginning of the eighteenth-century Adam Smith developed his theory of absolute advantage. His studies stated that, through free trade, each country would specialize in the manufacture of that good in which it obtained absolute advantage, which means that the country produce the good that makes more efficient than other nations. Therefore, the nations must obtain from the outside those products in which they had productive disadvantages. Later, at the beginning of the nineteenth century arises the famous idea of David Ricardiano of comparative advantage. This idea was a pioneering hypothesis since it explains that countries should specialize in those goods in which comparatively with other countries, are more efficient. That is, although a country does not have absolute productive advantage over others, they should compare the comparative costs in order to choose which good should export each country in trade benefiting both.

More recently, Bernhofen and Brown (2005) demonstrated empirically the effectiveness of this theory through the case of Japan's opening to foreign trade in 1860. Later, Haberler (1936) added to the Ricardian model, the theory of opportunity cost. This theory, measure the amount of one good that is left to produce one more unit of another good. In this way, countries will tend to specialize in those goods in which they have a lower opportunity cost.

These three authors focused their theories on the supply side of a country, in order to give a global aspect of the market, Scitovsky (1941) formed the curves of social indifference to understand the demand side. These curves show the preferences of consumers, being different combinations between two goods that provide the same level of satisfaction in an individual and that can be ordered by preferences.

Later another well-known and used model arises as a result of the Ricardian, which is that of Heckscher-Ohlin, formulated by the economists Heckscher in 1919 and Ohlin

1933. Created as a general equilibrium as two countries, two products and two factors where the general equilibrium occurs because of the different endowments of the capital and labor factors. Its contribution is that a nation exported the good that intensively uses the factor that most owns and imported the other good.

As can be seen, these theories predicted a trade basically between countries with different factor endowment, that is, they explained trade between industries or interindustry trade. The more different is the factor endowments of factor requirements between industries the bigger the trade between the countries. These theories explained the trade between countries by means of the comparative advantage but from the time when the Second World War appear it is shown that this option is not entirely valid because the increase in trade between countries happens mostly among those with analogous factors and between the same productions (interindustry). From that moment on, the importance of intra-industrial trade began to be considered

2.2 THE NEW THEORY OF TRADE

Fundamental to today's theory of trade are the theories of economies of scale and intercompany trade made between 1960 and 1990. Next, we will review the main authors and the theories they proposed as a basis for future research.

The first of the models of the new era called the "New Theory of Trade" was that of Krugman (1979) who exposes monopolistic competition in order to explain intra-industrial trade. His model includes economies of scale and imperfect competition. This theory bases its explanation that higher levels of production will provide lower costs which will make there a greater number of products offered which will give more options to consumers. Krugman (1979) would later call this theory the "new geography" as it was summed up in specialization, lower costs due to large-scale production and a very varied supply. At the same time, coinciding with Krugman (1980), Lancaster (1980) assured that the comparative advantage created by David Ricardo (1817) is not necessary since there is a large volume of trade between sectors, although the economies are equal and may even be greater than between different economies.

Later, it was followed by other works such as Either (1982) and Helpman (1981). All of them continue to develop the theories of economies of scale, the development of intra-industrial trade because companies specialize to reach the greatest number of consumers.

Until now, the role of businesses in international trade had taken on a secondary role, giving more importance to the differences of the countries and assuming that there were no differences between the companies in the same sector. This new theory of trade gains from welfare through the large number of different offers that consumers have at their scope.

The old and the new theory of international trade are only a model company in each industry, which facilitated the balance, but did not consider the differences between the productivity of corporations to provide a more realistic view of trade in a global way.

2.3 THE ROLE OF BUSINESS IN INTERNATIONAL TRADE

2.3.1 MULTINATIONAL OR HETEROGENEOUS FIRMS

Before investigating in this area, it is convenient to provide the definition of multinational. The one provided by Richard Caves (2007) is that a multinational is that company that supervises and manages production through facilities in two or more countries. A distinction must therefore be made between the company's parent company and the branches. The first of the two is located in the country of origin, in charge of supervising production, on the other hand, there are the subsidiaries that are those that are located abroad. These companies obtain great benefits thanks to the expansion to the international market, that allows them to have a global market strategy.

In the same way, on the one hand, Bernard 2018 pointed out that heterogeneous firms are those that have different productivity and cost structures within the same company, a clear example of this type of company are multinational enterprise that are installed in countries of different characteristics. It could be said that they are global corporations that take part in international trade through different margins and that together they represent a large part of the trade, so, these types of businesses have enough power to set prices. On the other hand, the heterogeneity of companies also refers to the differences that all companies have between them by the concrete characteristics such as productivity, personnel, and others. Max-Neef (1998) named this phenomenon multidimensional heterogeneity.

The origin of this new form of study of international trade was Hymer in 1960, who put the focus on multinational enterprise since he explained through his thesis that the approach to the study of international trade had become obsolete because of its incompatibility with the particularities of the data of foreign direct investment (FDI) obtained. To change this, he proposed a new approach based on the idea of positioning the main place of multinationals through real factors being simple financial exchanges outcomes of the decisions made as a result of the financial organization of the company. He explained that for the creation of multinational enterprise there are special assets that confer on certain ones, valuable advantages that place them above the national businesses of the country where they export.

This theory was later expanded by various authors such as Caves (1971), Rugman (1981) and Kindleberger (1969) who together with Hymer (1979) pointed out that multinational enterprise must have a unique advantage that allows them to compete with the corporations of the nations where they want to enter. Helpman (1984) also developed a theory of equilibrium based on the fundamental role of the multinational company for international trade in which he analyzed when a company might consider it profitable to become a multinational.

Later, thanks to Dunning's (1981) the theory of advantage OLI (Ownership, Location, Internalization) emerged. Extending Hymer's theory above, he added, that the existence of the multinational company came and is determined by an advantage first of all, of the possibility of try to participate in foreign markets, derived from specific assets, mainly related to technology and property rights that provide the company with the ability to establish itself in unknown markets. Secondly, the advantage of Localization that allows the firm to exploit the non-transferable assets existing in the various countries in which its subsidiaries are located making them more efficient thanks to choosing the best production market, being at first the fixed costs of the necessary assets very high but being positive in the long term since these assets can be used in various places where the corporation is positioned. Furthermore, lastly, the advantage of internalization, which allows the exploitation of the main assets to be dominant over future exploitation. Dunning's (1981) and his OLI theory gave rise to generate economies of scale that would allow within large international companies to efficiently harness the market possibilities of the company, especially when there are frictions in trade that disable exploitation through export.

This literature was not accepted by the theories collected by international trade until the early 1980s since until that time there had not been an exhaustive study on models of general equilibrium with scale growth, imperfect competition, and product differentiation.¹

Later, Helpman and Krugman (1985) create a new trade theory by adding the differentiation between products for specialization and the growth of returns at scale. This theory is a base model for the analysis of international trade with these characteristics.

Many authors are the ones who have used the OLI framework to base their theories. It highlights Eicher in 1986, who demonstrated the importance of ownership which allows businesses to grow through the exchange of information inside the company. Moreover, it should be added that Dunning, in 2001, tested the up-to-date effectiveness of his theory. He concluded confirming that the OLI advantage model remained a robust basis for future theories on foreigner direct inversion (FDI) and its production.

In the 90s there are many authors such as Bernard and Wagner (1997), Clerides, Lach and Tybout (1998), Jensen, Kortum, Eaton and Bernard (2003) who demonstrated fundamental the study of heterogeneous firms due to their evidence described between exports and the heterogeneous level of productivity. The economic perspective from which these new theories are analyzed is based on the costs and advantages of these corporations, explaining how heterogeneous firms and therefore multinational businesses develop in the market. These empirical studies also show that the actions of companies are fundamental in the mediation between imports and exports from the countries to which they belong.

The most famous model used as a basis in international trade referring to heterogeneous firms is the one formulated by Melitz (2003). This model is a consequence from the recent importance gained by multinational firms and the grow of trade's costs by reason of barriers to entry. In the model, it is included the trade's costs derived from the different structures within the same industry by country.

¹ Studied by Krugman in 1980.

Melitz's model (2003) was based on Krugman's (1980) model of monopolistic competition and diminishing profits. Through a series of conditions of monopolistic competition in which corporations produce a certain number of goods. Moreover, they have a productivity calculated by means of a completely fixed distribution that is positively related to the probability that the firm has of entering the foreign market.² Therefore, this model can only be studied by introducing heterogeneity inside the company.

The results of this model are, as will be discussed in the next section, only those companies that manage to be more productive and efficient will be able to export, while those that are to a lesser extent will remain in the home market. Thanks to the reallocations introduced among heterogeneous companies, it is a growth in the country's welfare when it is exposed to more trade. Therefore, those policies that prevent reallocation or intervene in the market will hinder trade in the country.

Afterward, Helpman, Melitz and Yeaple (2004) through the model proposed by Melitz (2003) predicted the famous "hierarchical order" of countries, thus leading to the study of the structure of multinational activity between countries. To do this they faced two important assumptions; firstly, by opening a subsidiary abroad, companies save themselves trade-related transport expenses, but incur fixed charges due to the supervision of the subsidiary. On the other hand, each country has a different productivity set by its peculiarities, so only those firms that have a productivity above the limit of the country will be able to establish themselves in it. What was deduced is that the most productive businesses should open subsidiaries even in those countries that are less attractive, while those that are less productive should go to countries that have more attractive characteristics. As a result, a "hierarchical order" was created in which an improvement in the characteristics of the country that makes it more attractive will produce an increase in businesses that want to own a subsidiary in the foreign state, thus producing a progressive decrease in the productivity of firms.

Moreover, given this "hierarchical order" present in standard models of heterogeneous firms' structural deviations occur, consenting to the use of scope diseconomies such as

² Previous models of international trade such as Krugman (1980) and Helpman and Krugman (1985) involved equal firms based on monopolistic competition, with all exporting companies having the same size and costs.

Nocke (2006) provides an explanation. The result of this model is that companies are more efficient when they find themselves in larger markets due to the force exerted by competition. This means that there are fewer companies in the larger markets.

Also, the empirical model of Keller and Yeaple (2008) introduce the costs of transferring technology which will produce increasing marginal costs when assisting the international market. It results in multinational companies obtaining greater success in the home market than abroad, and the higher the transport costs will be for multinationals with more complex technologies, the more complicated their transfer from the parent to the subsidiary will be. So, many of the multinationals will choose to replicate in the subsidiaries their most complicated activities

Later, Bernard, Redding, and Schott (2007) created a model that has linked more theory of international trade. This is the integrated model of heterogeneous firms and covers all the theories previously exposed. They create a model of heterogeneous firms with comparative advantages that studies how the characteristics of countries, firms and industries relate to each other to reduce the costs of trade. They assume as in the Heckscher-Ohlin model that there are two factors, two countries and two industries with different corporations within the same industry that each produces a differentiated good. This model states that, through trade liberalization, corporations with higher efficiency will grow more and survive while those with lower productivity will have a greater chance of failure, which is in line with the other economists in the next point. This paper concludes with the idea that heterogeneous firms provide an improvement in the well-being of worldwide trade by increasing output and increasing the productivity of the entire industry.

In 2009, Yeaple demonstrated through the model outlined above that the heterogeneity of businesses is fundamental when explaining the structure that follows the activity of multinational firms, those that are more productive can reach more markets, selling more in each of the markets in which they enter.

More recently, Bernard and col (2018) create a new theoretical framework that allows multinational companies to have large shares of a market and can choose at the same time in the different places of production, export and supply. They made the model using data from U.S. companies, that resulted in larger firms being more intensive in all trade margins which causes a greater differentiation between the particularities that each

company has. They also stated that the current model of heterogeneity in international trade is based on a competition of monopolies that are self-selected through markets that are dedicated to exporting to foreign countries.

Moreover, the model created by Ramondo and Rodríguez-Clare (2013) is one of the most significant bases of study in terms of the trade of multinationals and their production. This work is based on the Ricardiano model of trade, made by Eaton and Kortum (2002), but they also add that the technology developed in one country can be extended to others as it happens actually. ³

³ Ricardian trade model that assumes that each company produces at the national level and in each country different companies can manufacture the same good.

Figure 2

Table with the fundamental theories of current international trade. Own elaboration.

| REFERENCE | SCOPE | METHODOLOGY | OBJECTIVE | RESULTS |
|-----------------------|-------------|--|---|---|
| Krugman (1979) | Theoretical | Realization of a model of economies of scale and imperfect competition that explains intra-industrial trade. | Explain how real trade acted in the world. | The "new geography" arises because large-scale trade lowers costs, companies specialize and there is a varied offer. |
| Hymer (1960) | Theoretical | Theoretical comparison between FDI and portfolio investment. | Show the differences between investment methods abroad. | FDI allows greater control over foreign trade. It also provides greater market power, eliminates the problems of international trade, and diversifies products. |

| | | | | |
|---------------------------------------|---|--|--|--|
| Dunning(1981) | Theoretical | Grouping of other market theories to formalize theirs. | Explain the internationalization of companies. | The creation of the eclectic paradigm that explains that the existence of the multinational enterprise is given by the advantage of Property, Internationalization and Localization. |
| Melitz(2003) | Theoretical | Development of a model with heterogeneous and dynamic firms, establishing different levels of productivity of companies. | Study the effects of intra-industry trade at international levels. | Only the most productive companies will successfully participate in the international market. |
| Helpman, Melitz, Yeaple (2004) | Data on the grouping of international trade, the variables of proximity and concentration and the | Creation of an international trade model in which enterprises have the power to decide | Know how companies behave in the international market | It predicts that the most productive firms will invest in the foreign market, those that are less |

| | | | | |
|---------------------|---|---|---|---|
| | indices of the level of heterogeneity of the firm of US companies in 38 countries and 52 industries in 1994 | whether to invest, export or market only in their country of origin. | | productive will export and those that are still less productive will not participate in the international market. |
| Yeaple(2009) | Data from U.S. multinational companies in 1994. | Creation of a model composed of heterogeneous companies based on that of Helpman, Melitz and Yeaple (2004). | Expand the theory of the performance of companies abroad. | They show that those companies that are the most productive can invest in larger countries and sell more products in them. Also, that the heterogeneity of firms is essential to explain the structure of multinationals. |

3. SELF-SELECTION OF COMPANIES

Below, there will be a brief summary of why exporting companies are more productive than those that are only engaged in the national sphere, and whether these differences occur through international trade or already existed before the opening.

In 2000, in the U.S., 1% of major exporters exported 81% of products and U.S. Census Bureau data indicated that about 90% of exports and imports are in the hands of major multinational firms being made by them rather than by non-adept parts about half of the imports within the United States. (Bernard, 2009).

The firms that get to export their products are more productive, between 12% and 19%, and large than those that do not market their products abroad, it is also essential to add that those companies that choose to export are more likely to succeed and stay in the future compared to those that only sell nationally. This theory has been demonstrated by multiple works from different areas, in the case of Europe, Alguacil, Martí and Orts (2017) show that those companies that sell their products only at national level are, on average, smaller, less productive, less capital, and human capital, investment and development and tend to be younger than those international companies.

However, exporting only gives greater opportunities, but there is no evidence that all those companies that decide to export increase their productivity. In fact, a firm can only take advantage of these opportunities if it already belongs to the most productive in a sector before entering the international market (Bernard and Jessen 1999).

The traditional theory of international trade predicted that large firms that managed to trade abroad did so by taking advantage of differences in prices between countries across borders, calling this hypothesis the hypothesis of the proportions of factors. (Elhanan Helpman, 1984; Helpman and Krugman, 1985; Ethier and Horn, 1990).

At the same time authors such as Buckley and Casson in 1976, provided conditions that should be given for companies to decide to self-select and contribute to investments abroad. First, a real advantage is given by being located in the foreign country, such as, that the costs of production in the domestic market and export producing directly in the

foreign country. Second, it must provide a greater profitability to internationalize the advantages of the company through its expansion than to sell them to a foreign company.

Another of the characteristics that could lead a company to settle abroad is the one exposed by Vernon and Wells (1976). They assured that multinationals were profitable to establish themselves in less developed countries although their production was capital intensive since the wages of these countries are usually lower and can mean the difference in the cost that makes companies exceed their competitors.

One of the characteristics that is most repeated in the analysis of multinational companies is productivity. This productivity advantage that allows companies to select themselves must be given even before the company decides to export, exporters must be the most productive companies before their trade with abroad, not wait for it to occur as a result of international trade. Since, this type of firms are the ones that have the privilege of overcoming the cost of accessing international markets. In addition, when obstacles to international trade such as barriers or transport costs fall, highly productive international enterprises manage to survive and in fact tend to grow due to falling costs. Meanwhile, companies that do not export and are only engaged in domestic production tend to disappear because they cannot compete with these large companies. (Bernard, Regging and Schott, 2007)

According to Melitz (2003) those companies that manage to be the most productive are those that choose to enter foreign markets through investment funds, meanwhile, those that are, but to a lesser extent export directly to the destination. Following this theory, Tomiura (2007) studies that of the few companies that get to export, subcontract, or invest abroad, it is those companies that have subsidiaries abroad that turn out to be more productive and larger than those that only export or subcontract. Although all three types become more productive than the original enterprises.

There is a lot of economic literature on the subject. Antras and Helpman (2004), through a model of heterogeneous companies, studied the decisions that had to face firms when entering foreign countries. Based on previous work, Tomiura (2007) shows that those companies that are less productive acquire intermediaries in the country of origin, the averages (in terms of productivity) decide to subcontract, and the most productive ones chooses to invest.

Brainard in 1997, was one of the first authors to study the difference between investing abroad and an export from the country of origin. He found evidence that when transport costs and barriers to entry are higher and barriers to investment are lower, production in the domestic country tends to increase compared to exports by multinational enterprises. Moreover, contrary to what had been believed to date, it showed that there is greater activity in the country when both external and internal markets become more similar and economies of scale at the subsidiary level with that at the collective level.

Later, in 2009 through a data analysis carried out by Yeaple 2012. The paper demonstrated the importance of foreign direct investment for large companies. This is because the commercialization of domestic products in the U.S. to customers abroad only reached 25% of total sales of multinationals, with 75% being traded by means of the subsidiaries abroad of U.S. multinational enterprises. Also, in 2017, Alguacil, Martí and Orts through their empirical work verified that there is evidence that the structures of international activity in Europe are strongly correlated to static heterogeneity.

Significant data investigated by Bernard (2018), shows that those firms that turn out to be more productive and larger, that have been talked about in previous works, are not only important exporters. So, they export more of products they have and more different to each market in which they are participating. Furthermore, Bernard explains that they import more to the country of origin and from further nations.

On the other hand, as Akerman (2018) shows that goods produced by companies, that are less productive, are exported through wholesale firms that have a high technology. This allows them to buy goods manufactured nationally and, through fixed costs, sell them abroad. This kind of business are more relevant when the costs grow since exporting several products makes the cost among them shared. Akerman (2018) point out that these large enterprises obtain a great participation in international trade because of their technology. This allows them to commercialize with more than one good all at once, giving rise to economies of scope.

3.1 THE DECISION OF WHETHER TO INVEST ABROAD OR EXPORT

The current theory of international trade tries to solve why certain companies move from trading in their domestic market to international through foreign direct investment (FDI) and others decide to produce in their country and export. As only a small group of firms will decide to invest by establishing subsidiaries abroad, the theories with different perspectives and the evidence on this should be studied.

Spain in 2018 was one of the main recipients of FDI from multinationals. More specifically, this country was third European member receiving FDI and considering globally it was in ninth place. FDI that year was 4% of Spanish GDP being the US and, as expected, EU countries the countries that were most interested in investing in Spain.

Hymer (1960) is one of the first authors which demonstrates the significance of foreign direct investment since it stipulates several basic factors to invest abroad and that do not have to do only with the reduction of costs; the first is to exploit the advantages that the company has and that it can export to other markets in order to achieve greater market power. On the other hand, he points out that if synergies are created, the company with them will be able to enter foreign markets while ending the international conflicts that may be caused by trade abroad. It also suggests that it may be a good idea to diversify markets in such a way as to reduce the dangers of overstretching the domestic market.

Head and Ries (2003) studied empirically the case of the largest Japanese companies. According to his work, the companies that choose to export to a foreign market are larger than those that are only engaged in marketing domestically, while those companies that invest abroad are larger than those that only export.

Many companies decide on engage in FDI project, which raises the question about the reason behind to open production plants abroad. There is little literature on real data studies to formulate a theory, since it is important to make the decisions of where establish the subdivision offices based on experience. Morales, Sheu and Zahler (2019) determine a dynamic model in which the introduction of firms in new markets depends on how similar they are with the countries where it has been previously (called extended gravity), and in the country where the matrix is located (called gravity). They predict that costs will be reduced if the country of destination has similarities with the previous ones,

thus creating an interdependence between the end markets. This study is revealing because if you act in markets with extended gravity the entry costs can be reduced by up to 90% being the largest decreases in costs resulting from the language (up to 36%) and location (38%). Even with this, it is true that larger companies have an advantage in deciding the country of destination of their exports since they have a greater knowledge about the countries to which they want to go even if they have not come to market in the past with them. (Dickstein, Morales, 2018).

Prior to this study, Das, Roberts and Tybout (2007) through data collected from Colombian firms asserted that the decision of where to export depended partly on the entry costs, the exchange rate, the heterogeneity of the industries and the experience that the company had with respect to its previous exports. Likewise, with regard to the aid provided by the states, they said that in order to favor exports, income subsidies are the ones that most promote this trade.

Irarrazabal, Monxes and Opromolla (2009), using data from Norwegian companies, developed a model that incorporates the intra-company trade to the work of Helpman, Melitz and Yeaple (2004) . This becomes essential for the development of multi-plant enterprises in other countries.

Following the model of "hierarchical order" explained above and developed by Helpman, Melitz and Yeaple (2004), Aguacil, Martí and Orts (2017) demonstrated theoretically and empirically for Europe, that if the strategy of FDI and exports coexist in the same framework, it will only be possible to show a strict hierarchy for those companies that decide to invest by opening subsidiaries in the foreign country and not for those that decide to export. Being the relative heterogeneity to the level of efficiency gain of European firms important for the strategy they take in the face of the internationalization of FDI or export, also for the choice of how many markets to operate.

Finally, another of the great factors that supposes an increase in the opening of subsidiaries in foreign countries can be explained through tariff rates. Their reduction allows a greater trade between the same company without the need for higher costs. This was verified by Feinberg and Keane (2006), using data from the main multinationals of the U.S.

4. HOW MULTI-PLANT ENTERPRISES AFFECT COUNTRIES

4.1 IMPLICATIONS FOR THE COUNTRY'S ECONOMY

Next, we study, through the economic literature of international trade, the relationship between countries characteristics and heterogeneous companies, explaining how these come to influence national decisions.

Firstly, making use of the real data, according to Alan Rugman (1988) more than 50% of the world's trade was controlled by the 500 largest multinational enterprises, accounting for one fifth of the world's total GDP, and therefore the decisions produced by these companies are very important. Currently, if it is the Spanish state, multinationals account for 42% of the country's exports, being directly responsible for 38% of the outlay on innovation. (ABC, 2020) This can be explained because as they have studied the theories above, these firms are more productive, being specifically in Spain 11% more productive the subsidiaries of foreign multinational enterprises than the productivity of national companies.

To start with the theory, several ideas concerning the importance of multinational enterprises can be extracted in the famous analysis known as "Competitiveness Diamond" of nations, carried out by Porter in 1990. Firstly, the influence on the competitiveness of companies depends on the countries where they market, with domestic demand being essential for firms to strive for a quality product that is beneficial to the market. On the other hand, only the existence of multinational enterprises already provides that in a country there is competitiveness at an international level through the knowledge acquired thanks to foreign companies. Also, the entry of these firms into new markets drives innovation due to the strong rivalry generated in the sector.

Falvey, Greenaway and Yu (2004) demonstrated that, in countries asymmetric in terms of efficiency, openness to foreign trade provides a greater result of self-selection among companies. This reflects positively in the country increasing national income, efficiency, benefits and providing an improvement in social welfare. However, the scholars showed that in those countries that are more efficient have a greater number of firms that want to export and a greater number of failures. This could suppose a greater risk and simultaneously a greater profitability derived from the expected income.

Based on his theory of the call effect to companies, Yeaple (2009) stated that those countries that are more attractive to U.S. multinationals tend to bring less productive and smaller firms closer by the effect of "hierarchical order" explained in the previous section. In addition, he showed that those companies that are more productive have more subsidiaries in a greater number of countries, because those countries that are less attractive to other companies, for them remain so.

Similarly, those countries that obtain higher imports and direct investment are more likely to acquire a better production model that allows domestic firms to be more productive. Between 1987 and 1996 in the US, a study by Keller and Yeaple (2003) demonstrated clear evidence that the economic effects produced by the entry of exporting companies symbolized about 14% of the productivity growth of state-owned enterprises.

A more recent study by Rodrigue (2014) said that international trade and the entry of production by multinationals lead to significant increases in productivity. For this study, a model of production and export at the multinational level of heterogeneous companies was carried out, discovering the importance of multinational production relations and the company's means of trade to establish a foreign direct investment policy and the aggregate instruments of marketing.

In addition, Markusen (1984) assert that multinational companies give the country in which they are located, a greater technical efficiency in terms of productivity, by owning different independent plants throughout the world, since they manage to eliminate the duplicate contributions that would give together independent companies of the country. This is largely because multinational companies have the ability to transmit improvements in technology to the countries in which it is installed (Tintelnot, 2017).

At the same time, the growing number of multinational enterprises and the increase in technological efficiency have allowed that thanks to the reduction in the cost of production, countries can specialize, being some experts in innovation and others in the production of both services and goods. The latter can get losses, even if these are very small. Thus, countries specialize in the area in which they are most productive, favoring globalization. (Arkolakis, 2017).

It is also noteworthy to emphasize that the presence of exporting companies increases considerably the well-being and competition of both the origin and destination countries. According to Akerman (2018), the presence of wholesalers causes price indices to be lowered, thus reducing the effects of fixed costs. In addition, they bring diverse products to the entire population, stating that the role of this type of company in exporting is crucial in countries with high barriers to entry.

Finally, it is also noteworthy that multinationals tend to generate more links with those countries where the cost of communication between the headquarters and the subsidiary is higher, either because of geographical areas or because of cultural and legal differences; therefore, in countries where there are more differences between the matrix and the plants, factors specific to foreign countries will be more likely to be used. (Rodriguez, 1996).

For these reasons, Tintelnot (2017) showed that countries tend to compete for a greater number of multinationals in order to develop more widely as a country. Thus, those smaller countries would be harmed if a close one improves its qualities by attracting more multinationals. At the same time, DeAnne (1990) demonstrated that between 1961 and 1988, most of the foreign direct investment made from the five countries with the highest rate of industrialization went to the other countries within this same group, reaching almost 70 per cent of this reciprocal investment in 1988.

4.2 IMPLICATIONS FOR THE COUNTRY'S POLITICS

Regarding the political issue, it is well known that political decisions taken by states, fiscal and economic trade policies, may influence the structure and volume of trade and the existing companies

Moreover, it was well known the model "Protection for Sale" by Grossman and Helpman (1994), here they explained that lobbies contribute for politicians, while they adopt advantageously measures to favor lobbies. Many are the works that talk about the existence of lobbies, in particular Bombardini (2007) shows that it becomes efficient the formation of a lobby by the largest firms in the same industry. This is already explained that those sectors that own larger companies have a greater activity in politics which provides an increase in protection in the sector.

Another work carried out by Sadrieh and Annavarjula (2005) points out that it is also fundamental to be able to exert political pressure, the profitability that the company supposes, the diversification of its products and its internationalization provided that the company is national, since if it is of foreign origin it causes a negative impact.

Adding some changes that updated the work of Grossman and Helpman (1994), Abel-Koch (2009) made some interesting contributions. Through this work try to explain how barriers, that did not have to do with tariffs in trade, are greater when trade is more restricted. They concluded that these measures did not improve social welfare and therefore it was not optimal to apply them. Unsurprisingly, the restrictions imposed at the border will certainly harm foreign companies and consumers who will see their prices rise, there by damaging social welfare. A government concerned about the general good should not choose such measures, but if they will be applied, they should be as harmful as possible to prevent the entry off firms.

For Restuccia and Rogerson (2008) policies not focused on investment, which come to establish differences in prices by challenging individual producers through policies with different distorting effects for each individual producer, lead to a decrease from 30 to 50 percent in both production and total productivity.

Linking the aspect of policies with the current situation, according to the media elEconomista.es (June 5, 2021), the Group of Seven (G7) is considering imposing a global corporate tax of 15% on multinationals which could, according to the study described above, harm social welfare. However, this measure would not imply any change in the Spanish state since currently according to the *Country by Country Report* multinationals in Spain pay an average corporation tax of 17% of their global profits, 8% lower than the tax rate in force in Spain.

About the issue of productivity we must say that is a fundamental variable for multinational enterprises and for their selection in the markets. We find that Baily, Hulten and Campbell (1992) calculated through data, that productivity grow in the manufacturing sector in the United States in 1980 because of labor and capital become high productivity factors.

5. OTHER ISSUES RELATED TO THE INTERNATIONALIZATION STRATEGY OF ENTERPRISES

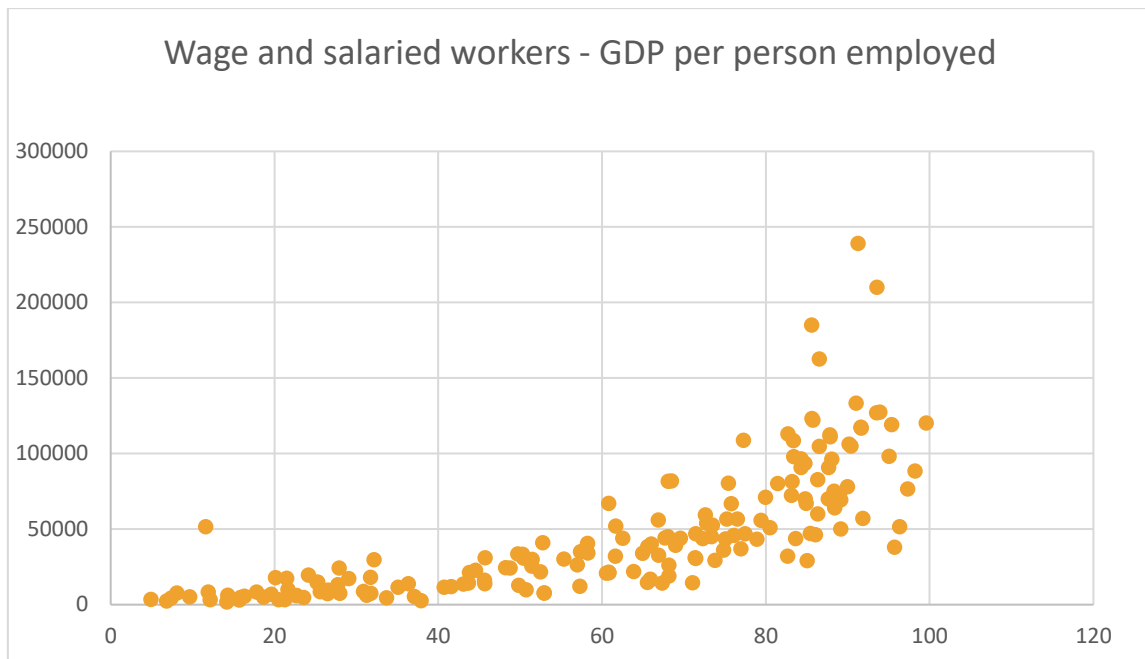
5.1 THE DIFFERENCE IN WAGES

When talking about the importance in the difference in wages between large multinationals, we must talk about the work done by Abowd, Kramarz and Nargolis (1999) which ensured that those companies that hire workers with higher wages tend to be more productive and profitable. Largely, this can be explained since these workers usually have characteristics that are not observable and that make them stand out, without being paramount among these characteristics education. Through their study in France, they found that 90% of the differences in wages between industries depended on the qualities of the person, and that these qualities explained approximately 75% of the effect of the salary on the size of the firm.

As can be seen in Figure 3, the 2017 data confirm this, since, taking a sample of 174 countries, it is observed that those with higher wages tend to be more productive. Following therefore an upward trend that would indicate that effectively those workers who obtain better wages are more productive in their job.

Figure 3

Relationship between workers' wages and productivity



Notes: Productivity and wages of 174 countries of the world. The X axis being the wage per worker (modeled ILO estimate) and the Y axis the productivity per worker (in constant 2017 PPP dollars). Own elaboration. Sources: International Labour Organization

The presence of multinational enterprises abroad allows those wages between countries tend to equalize reaching equitable levels of international ones. This provides a pillar for an intra-industrial trade, as a result of the similarity of the endowment of the factors (ownership in OLI) (Either, 1986).

Bernard and Jensen (1990) they also claimed that those companies that participate in international trade through their exports pay higher wages to all their workers so it is possible that wages will increase in the presence of multinationals. Empirical studies related to the United Kingdom, state that due to the differences in the demand for factors, particularly labor, of multinational enterprises compared to national ones, they tend to pay up to 7% more to their employees due in large part to the higher productivity that occurs in these firms. (Driffield, 1996).

In addition, due to the increase in productivity, they represent greater profits measured in a greater number of jobs of all kinds, being each time that companies are larger and more stable, more permanent in the future these jobs. (Bernard and Jensen, 1990)

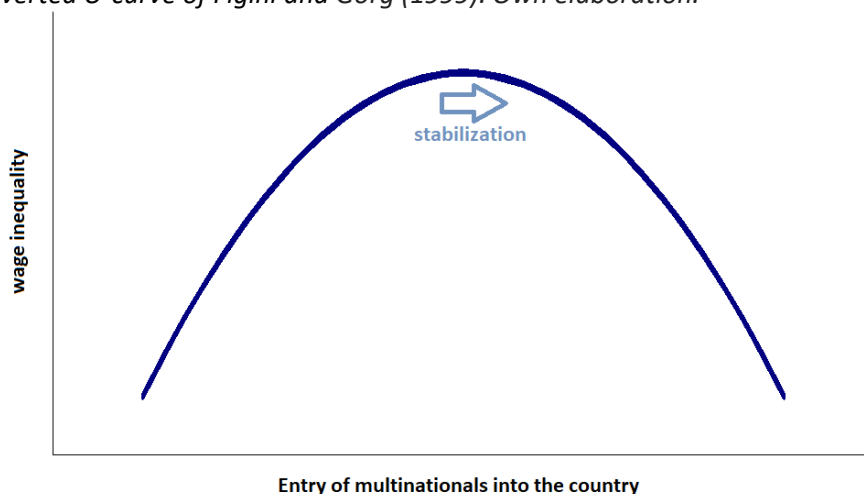
It should be added that although in most theories the wages that have been studied increase as a result of the presence of multinational enterprises, according to the empirical work carried out by Taylor and Drieffield (2000) through data from the United Kingdom, foreign direct investment comes to exert a negative impact on the labor market since it tends to increase inequality in wages. This is mainly due to the entry of multinationals into the country that demand skilled labor and the transfer of technology knowledge from this type of company to national companies which means that the latter also demand more qualified work for their firms. This need for skilled labor means that wages within the same sector are very different depending on the qualification.

In 2019 multinationals with foreign capital in Spain employed 14.7% of those employed in the country, there being a strong wage gap as studied by the work of Taylor and Drieffield (2000), workers of foreign subsidiaries received 35.2% more salary than workers in Spanish companies(ABC, 2020). This turned out to be fundamental for Spain because during the Spanish crisis, this type of companies has not stopped hiring workers and actually many of them have even increased their workforce.

Even with this, authors such as Figini and Görg (1999), through an analysis of data from Ireland, have shown that this increase in wage inequality, although true, is U-shaped inverted. First, wage inequality increases, but when the multinational stabilizes in the country of destination the wages difference is reduced as shown in Figure 4. This is explained because the unskilled labor force tends over time to acquire the knowledge of the new technology with which wages tend to equalize and the wage gap to

Figure 4

Inverted U-curve of Figini and Görg (1999). Own elaboration.



6.CONCLUSIONS

This end-of-degree project summarizes the findings and conclusions of the new theory of international trade based on companies, and more particularly on heterogeneous companies. A literature review that begins through Hymer 1960 and ends with current authors, such as Morales, Sheu and Zahler (2019) has generated answers to big questions about multinational companies.

There are many qualities that a company must gather to be successful in international trade. They must have advantages in ownership, internationalization and location aspects, since only those companies that manage to use their own characteristics in their favor and be more productive in their sector before internationalizing will be able to enter foreign markets successfully and with a greater permanence.

For this self-selection to happen freely, states should intervene properly, since the entry of multinational companies has been shown to improve global well-being. They help to create a more globalized market with greater exports and imports in the country where they are located, increase competitiveness, productivity and improve the transmission of technology and innovation. It has also been studied that multinational firms provide higher wages, although at the same time this means an increase in the wage gap that will only be reduced when the multinational company stabilizes in the foreign market.

In addition, we should take into account that heterogeneous companies acquire decision-making power in politics through the creation of lobbies that will even lead to greater efficiency since there will be greater protection of the sector.

Those companies that intend to expand their market must decide if they will do so through export or FDI, according to the studies those that export are more productive than those that are only dedicated to the domestic market and those that decide to invest abroad are greater than those that only export. In order to expand into the foreign market, companies will have to make profits measured in terms of a real advantage and higher profitability. It will be advantageous if the country in which they decide to settle down has similar characteristics with which they have already been or where the matrix is located. Even so, multinationals that turn out to be the most productive in the global market will manage to establish themselves in countries that may even seem less attractive because of the so-called "hierarchical order". The most productive firms have also more subsidiaries around the world.

This work may be useful for international trade researchers who want to have a basis knowledge about the theory on multinational companies and their connection with trade. It could also be useful for companies that want to expand to other markets and want to know more about the empirical and theoretical works of how to achieve success. Even so, it has been noticed through the search for the realization of the work that it is a very new vision of trade and there is still a great field of study on this subject. It should be analyzed the capacity that large companies have on people and how their decisions affect society. In addition, should be investigated whether the transmission of technology by them is effective and if there are other important issues not related to the aforementioned that make these companies self-select.

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